

Remarks

Reconsideration of the subject application is requested in view of the foregoing amendments and the following remarks.

The search performed by the examiner in connection with conducting a substantive examination of the claims is appreciated.

The amendments to the specification are to correct readily discernible typographical and grammatical errors. The amendment to the paragraph beginning on page 7, line 9 is to update the information on the cited reference that was incorporated by reference. No new matter is submitted.

Claims 1-36 are pending. In this paper, claims 1, 9-11, 21, 23-24, 27, and 29 are currently amended; claims 8 and 18-20 are canceled without prejudice; and claims 2-7, 12-17, 22, 25-26, 28, and 30-36 are unchanged. Therefore, upon entry of this Amendment, claims 1-7, 9-17, and 21-36 will be pending.

Claim 1 is amended to provide closed parentheses on the letters designating the subparagraphs of the claim. Claim 1 also is amended to clarify the content of the communication signal. The specification indicates that a communication signal from a mobile wireless device to a base station generally is a radio signal that is effectively a "call," and that a call is made up of call data. See specification on page 5, lines 12-13, 14-15, and 19-20; page 6, lines 9, 13-16, and 19; page 7, lines 3-5, 9-11, and 15-17; page 8, lines 2-4, 13-14, and 16-17; page 9, lines 5-8; FIG. 3.

Claims 9 and 10 are amended to change dependency in view of the cancellation, without prejudice, of claim 8.

Claim 11 is amended for reasons similar to the reasons underlying the amendments to claim 1 and to correct a typographical error.

Claim 21 is amended for reasons similar to the reasons underlying the amendments to claim 1 and to clarify that the communication signals include at least one uplink performance parameter. See specification on page 6, line 13 to page 7, line 2; page 7, lines 9-11; page 8, lines 2-4 and 17-18; page 9, lines 8-12. Claim 21 also is amended to clarify what the timestamp data are. See specification on page 5, line 22 to page 6, line 2; page 6, lines 8-9; page 7, line 23

to page 8, line 2. Claim 21 also is amended to add the word "respective" at appropriate places for clarity.

Claim 23 is amended for reasons similar to the reasons underlying the amendments to claims 1 and 21. Claim 23 also is amended to achieve consistency in the use of the word "means."

Claim 24 is amended for reasons similar to the reasons underlying the amendments to claims 1 and 21, and to correct certain typographical errors.

Claim 27 is amended for reasons similar to the reasons underlying the amendments to claims 1 and 21, and to correct certain typographical errors.

In view of the foregoing, none of the amendments to the claims constitutes new matter.

Claims 1-2, 8-9, 11-12, 18-19, 21, 30, and 32-36 stand rejected for alleged obviousness from a combination of Haymes and Rahman. This rejection is moot with respect to canceled claims 8 and 18-19, and is traversed in view of the remaining subject claims.

Independent claim 1 as amended is directed to methods for monitoring the performance of a wireless system. The methods comprise the steps of: (a) transmitting a communication signal from a mobile wireless device to a radio base station, wherein the communication signal comprises call data; (b) obtaining uplink performance parameters associated with the communication signal; (c) obtaining location information of the mobile wireless device by analyzing the communication signal; and (d) evaluating the performance of the wireless system using the uplink performance parameters associated with the communication signal received from the mobile wireless device and the location information of the mobile wireless device.

Applicant agrees with the admission in the Office action that Haymes "does not specifically disclose obtaining uplink performance parameters associated with the communication signal and evaluating the performance of the wireless system using the uplink performance parameters associated with the communication signal received from the wireless device." In other words, it is mutually agreed that Haymes does not teach or suggest step (b) in claim 1.

Haymes also fails to teach or suggest steps (c) and (d) in claim 1. Specifically, contrary to the contentions on page 3 of the Office action, Haymes fails to teach or suggest obtaining location information of the mobile wireless device by analyzing the communication signal. Rather, in Haymes, location information (which can be information obtained using GPS) is

obtained and included in the context of an error signal or error message, which is a distinctive signal sent by the mobile wireless device (operating in an "error reporting mode") whenever there has been a transmission difficulty and/or an abundance of errors. See, e.g., col. 1, lines 47-49; col. 2, lines 23-27, 47-51, and 54-61; col. 3, lines 24-27; col. 4, lines 43-46; col. 5, lines 5-9, 22-27, 36-39, and 57-59. In view of the manner and circumstances, discussed in Haymes, in which the error signal is generated and used, the error signal is not understood to be, or to be associated with, a communication signal. Hence, Haymes is not understood to obtain location information of the mobile wireless device by analyzing the communication signal. In view of this shortcoming of Haymes, this reference also is not understood to evaluate the performance of the wireless system using both (1) the uplink parameters associated with the communication signal received from the mobile wireless device and (2) the location information of the mobile wireless device. In other words, Haymes fails to teach or suggest steps (c) and (d) in claim 1.

Page 3 of the Office action contends that "Rahman discloses obtaining performance parameters associated with the communication signal and evaluating the performance of the wireless system using the uplink performance parameters associated with the communication signal received from the mobile wireless device." For the sake of argument without making any admission regarding Rahman, even if Rahman provided such a disclosure, Rahman still would fall short of fulfilling the deficiencies of Haymes with respect to steps (c) and (d) of claim 1. For example, Rahman does not teach or suggest evaluating the performance of the wireless system using both (1) the uplink parameters associated with the communication signal received from the mobile wireless device and (2) the location information of the mobile wireless device.

Therefore, claim 1 is not obvious from and is properly allowable over any combination of Haymes and Rahman.

Claims 2-7, 9-10, and 30-33 depend from claim 1 and are properly allowable over Haymes and Rahman for all the reasons discussed above pertaining to claim 1. In addition, since each of claims 2-7 and 9-10 adds at least one respective feature to the combination set forth in claim 1, each of these dependent claims sets forth a respective combination that is patentable in its own right over the cited references. Therefore, withdrawal of the rejection of claims 1-2, 9, 30, and 32-33 is proper and hereby requested.

Independent claim 11 as amended is directed to methods for monitoring the performance of a wireless system. The methods comprise the steps of: (a) transmitting respective

communication signals from a plurality of mobile wireless devices to a radio base station, wherein the communication signals comprise respective call data; (b) obtaining uplink performance parameters associated with the communication signals; (c) obtaining location information of the plurality of mobile wireless devices by analyzing the communication signals; and (d) evaluating the performance of the wireless system using the uplink performance parameters and the location information of each of the plurality of mobile wireless devices.

Claim 11 was "rejected for the same reason as set forth in claim 1." In view of the foregoing discussion regarding the allowability of claim 1 over the combination of Haymes and Rahman, claim 11 is properly allowable for all the same reasons as discussed above regarding claim 1.

Claim 12 (as well as claims 13-17) depends from claim 11 and is properly allowable over Haymes and Rahman for the reasons discussed above pertaining to claim 11. Also, since claim 12 adds at least one feature to the combination set forth in claim 11, the claim-12 combination is patentable in its own right over the cited references. The same holds for each of claims 13-17. Therefore, withdrawal of the rejection of claim 12 is proper and hereby requested.

Independent claim 21 is directed to systems for monitoring performance of a wireless system. The system comprises a plurality of wireless devices which transmit communication signals to a radio base station, wherein the communication signals comprise respective call data and at least one uplink performance parameter. The system also comprises a first receiver that is located at the radio base station which receives the communication signals and transmits the communication signals to a switch. The system also comprises a second receiver located at the radio base station which monitors the communication signals and transmits timestamp data associated with the communication signals to the switch, wherein the timestamp data is associated with respective locations of the wireless device. The system also comprises a system analyzer coupled to the switch which evaluates the performance of the wireless system based on the respective uplink performance parameters and the respective locations of the wireless devices.

From the foregoing, it is pointed out that, in claim 21, the communication signals transmitted by the wireless devices comprise both respective call data and at least one uplink performance parameter. As discussed above in connection with claim 1, Haymes does not teach or suggest such wireless devices.

It is also pointed out that the claimed system also comprises a second receiver located at the radio base station which monitors the communication signals and transmits timestamp data associated with the communication signals to the switch. Page 5 of the Office action contends that col. 3, lines 34-46 of Haymes allegedly discloses this feature. This contention is incorrect. The cited portion of Haymes discusses an error receiver that receives the error messages. As discussed above, the Haymes error messages are not understood to be the communication signals recited in claim 21; thus, the "error receiver" of Haymes is not understood to be the instantly claimed second receiver. Furthermore, in Haymes, the error receiver supplies error data to an error database that is connected to a time-of-day clock, wherein the database feeds the error data, the location, and the time of day to a database processor. The Haymes "time-of-day" clock is not understood to be or to provide timestamp data to communication signals as recited in claim 21.

The system analyzer recited in claim 21 evaluates the performance of the wireless system based on both (1) the respective uplink performance parameters and (2) the respective locations of the wireless devices. In view of the foregoing discussion, and in view of the admission on page 3 of the Office action, Haymes is not understood to teach or suggest such a system analyzer.

With respect to claim 21, Rahman does not fulfill the deficiencies of Haymes. Page 5 of the Office action contends that col. 8, line 64 to col. 9, line 16, and col. 11, lines 4-19 of Rahman allegedly discloses the claim-21 system analyzer that is coupled to the switch and that evaluates the performance of the wireless system based on the respective uplink performance parameters and the respective locations of the wireless devices. This contention is incorrect. The cited text discusses an uplink performance measurer and a downlink performance measurer that appear to measure uplink and downlink performance, respectively. But, there is no teaching or hint that these measurers measure performance based on both (1) respective uplink performance parameters and (2) respective locations of the wireless devices.

Therefore, claim 21 (as well as claims 22 and 34 that depend from claim 21) is properly allowable over the cited references. Also, since each of claims 22 and 34 adds at least one respective feature to the combination set forth in claim 21, the combinations recited in claims 22 and 34 are patentable in their own right over the cited references.

Independent claim 35 is directed to methods for assessing wireless system performance. The method comprises collecting downlink call data associated with a call to a mobile wireless

device; collecting uplink call data associated with the call to the mobile wireless device; obtaining location information associated with the mobile wireless device; and, based on the downlink call data, the uplink call data, and the location information, evaluating system performance.

As discussed above, the Office action admits that Haymes "does not specifically disclose obtaining uplink performance parameters associated with the communication signal and evaluating the performance of the wireless system using the uplink performance parameters associated with the communication signal received from the wireless device." Applicant agrees. Thus, it is mutually agreed that Haymes does not teach or suggest collecting uplink call data associated with the call to the mobile wireless device. Furthermore, in view of this deficiency of Haymes, this reference also is not understood to evaluate the performance of the wireless system using all three of: (1) the uplink call data, (2) the downlink call data, and (3) the location information associated with the mobile wireless device. The citation on page 6 of the Office action to col. 3, lines 34-46, of Haymes does not cure this deficiency.

Page 6 of the Office action also contends that col. 8, line 64 to col. 9, line 17 of Rahman teaches evaluating the performance of the wireless system using all of (1)-(3), in the preceding paragraph. This contention is incorrect. The cited portion of Rahman discusses evaluation of system performance by transmitting "actual quality of service . . . from the uplink performance measurer 28, the downlink performance measurer 50, or both, to the quality sample organizer 52." Note that also considering location information in the evaluation of system performance is conspicuously absent. Therefore, Rahman does not fulfill the deficiencies of Haymes.

From the foregoing, claim 35 (as well as its dependent claim 36) is properly allowable over the cited references. Also, since claim 36 adds at least one feature to the combination set forth in claim 35, the combination recited in claim 36 is patentable in its own right over the cited references.

Claims 22-29 stand rejected for alleged obviousness from a combination of Haymes, Rahman, and Hawkes. This rejection is traversed in view of the proper allowability of claim 21 over Haymes and Rahman, as discussed above. In addition, applicant agrees with the admission on pages 6-7 of the Office action that "Haymes in view of Rahman . . . does not specifically disclose wherein a time difference of arrival location processor is coupled to the switch and to the system analyzer."

With respect to claim 22 (which depends from claim 21), in view of the deficiencies of Haymes and Rahman, discussed earlier above in connection with independent claim 21, Hawkes does not fulfill the deficiencies of Haymes and Rahman. Specifically, Hawkes is cited for its alleged disclosure of a time-difference-of-arrival (TDOA) analyzer. For the sake of argument without making any admission, even if Hawkes provided such a disclosure, this would not fulfill the deficiencies of Haymes and Rahman. Furthermore, whereas TDOA is known in various contexts, it does not follow that such knowledge of TDOA renders obvious all uses of TDOA. The inescapable conclusion from the foregoing discussion is that the cited combination of three references does not teach or suggest the particular combination set forth in claim 22.

Claim 23 was "rejected for the same reason as set forth in claim 21." In view of the foregoing discussion regarding the allowability of claim 21 over any combination of Haymes and Rahman, claim 23 also is properly allowable over these two references for the same reasons as discussed above regarding claim 21. Also, since claim 23 adds at least one feature to the combination set forth in claim 21, the combination recited in claim 23 is patentable in its own right over Haymes and Rahman. Hawkes, discussed above, does not fulfill the deficiencies of the combination of Haymes and Rahman. Therefore, claim 23 is properly allowable over any combination of these three references.

Claim 24 was "rejected for the same reason as set forth in claim 21." In view of the foregoing discussion regarding the allowability of claim 21 over any combination of Haymes and Rahman, claim 24 also is properly allowable over these two references for the same reasons as discussed above regarding claim 21. Hawkes, discussed above, does not fulfill the deficiencies of the combination of Haymes and Rahman. Therefore, claim 24 (as well as its dependent claims 25 and 26) is properly allowable over any combination of these three references.

Claim 27 was "rejected for the same reason as set forth in claim 21." In view of the foregoing discussion regarding the allowability of claim 21 over any combination of Haymes and Rahman, claim 27 also is properly allowable over these two references for the same reasons as discussed above regarding claim 21. Hawkes, discussed above, does not fulfill the deficiencies of the combination of Haymes and Rahman. Therefore, claim 27 (as well as its dependent claim 28) is properly allowable over any combination of these three references.

Claim 29 was "rejected for the same reason as set forth in claim 21." In view of the foregoing discussion regarding the allowability of claim 21 over any combination of Haymes and

Rahman, claim 29 also is properly allowable over these two references for the same reasons as discussed above regarding claim 21. Hawkes, discussed above, does not fulfill the deficiencies of the combination of Haymes and Rahman. Therefore, claim 29 is properly allowable over any combination of these three references.

Claims 3-5, 7, 13-15, 17, and 31 stand rejected for alleged obviousness from a combination of Haymes, Rahman, and Hall. This rejection is traversed.

Claims 3-5, 7, and 31 each depend from claim 1, and each is properly allowable over Haymes and Rahman for the reasons discussed above pertaining to claim 1. In addition, since each of claims 3-5, 7, and 31 adds at least one respective feature to the combination set forth in claim 1, each of these dependent claims sets forth a respective combination that is patentable in its own right over Haymes and Rahman. In addition to these distinctions, Applicant agrees with the admission on page 8 of the Office action that "Haymes in view of Rahman . . . does not specifically disclose that the location information of the wireless device is collected from a plurality of cell sites." Hall was cited in the Office action for Hall's alleged disclosure of collecting location information from a plurality of cell sites. Without commenting on this contention, it is immediately apparent that, even if (for sake of discussion) Hall provided such a disclosure, it falls short of fulfilling the other deficiencies of the combination of Haymes and Rahman discussed earlier above. Therefore, claims 3-5, 7, and 31 are properly allowable.

Claims 13-15 and 17 each depend from claim 11, and each is properly allowable over Haymes and Rahman for the reasons discussed above pertaining to claim 11. Also, since each of claims 13-15 and 17 adds at least one respective feature to the combination set forth in claim 11, each of these dependent claims sets forth a respective combination that is patentable in its own right over Haymes and Rahman. In addition, referring to the various deficiencies of the combination of Haymes and Rahman with respect to the combination of elements recited in claim 11, as discussed earlier above, it is immediately apparent that Hall does not fulfill those deficiencies.

Claims 6, 10, 16, and 20 stand rejected for alleged obviousness from a combination of Haymes, Rahman, Hall, and Kong. This rejection is traversed.

Claims 6 and 10 (as amended) each depend from claim 1, and each is properly allowable over Haymes and Rahman for the reasons discussed above pertaining to claim 1. In addition, since each of claims 6 and 10 adds at least one respective feature to the combination set forth in

claim 1, each of these dependent claims sets forth a respective combination that is patentable in its own right over Haymes and Rahman. In addition to these distinctions, Applicant agrees with the admission on page 10 of the Office action that "Haymes in view of Rahman and further in view of Hall . . . does not specifically disclose that the time difference of arrival location processor is in the wireless device." Kong was cited for its alleged disclosure of a TDOA location processor being located in the mobile station. Without commenting on this contention, it is immediately apparent that, even if (for sake of discussion) Kong provided such a disclosure, it falls short of fulfilling the other deficiencies of the combination of Haymes and Rahman (and of Haymes, Rahman, and Hall) discussed earlier above. Therefore, claims 6 and 10 are properly allowable.

Since claim 16 was "interpreted and rejected for the same reason as set forth in claim 6," Applicant responds with the same comment as set forth in the preceding paragraph. Claim 16 depends from claim 11 and is properly allowable over Haymes and Rahman for the reasons discussed above pertaining to claim 11. In addition, since claim 16 adds at least one feature to the combination set forth in claim 11, claim 16 sets forth a combination that is patentable in its own right over Haymes and Rahman. The deficiencies of Haymes and Rahman discussed earlier above are not cured by Hall and Kong, either alone or in combination.

In view of the foregoing, claims 1-7, 9-17, and 21-36 are properly allowable, and early action to such end is requested.

If any issues remain after consideration of the contents of this paper, the Examiner is requested to contact the undersigned to schedule a telephonic interview.

Respectfully submitted,

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